

Analysis of Labor Time Allocation and the Contribution of Housewives to Farm Household Income in Mataram City''

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DOI: <https://doi.org/10.5281/zenodo.16165275>

Published Date: 19-July-2025

Abstract: This study aims to analyze labor time allocation, identify the factors influencing time allocation, assess the income contribution of housewives, and examine the relationship between women's labor time allocation and farm household income in Mataram City. A descriptive method was employed, using data collected through structured questionnaire-based interviews. The research subjects were housewives from farming households residing in Sekarbela District, Mataram District, and Sandubaya District. The districts were selected using purposive sampling, while the respondents were chosen using systematic sampling, totaling 43 individuals. The collected data included both quantitative and qualitative information, which were analyzed using descriptive quantitative methods and regression analysis. The results show that the average labor time allocation of housewives in farming households in Mataram City amounted to 2,019 hours per year, consisting of 1,122 hours/year (55.56%) for agricultural activities and 897 hours/year (44.41%) for non-agricultural activities, categorizing them as part of the full-time labor force. Factors significantly influencing labor time allocation in agricultural activities include the number of household members, the age of the youngest child, and the size of agricultural land. In contrast, non-agricultural labor time allocation is influenced by the housewife's age, the number of household members, the age of the youngest child, and land size. In general, labor time allocation in economic activities is significantly affected by the age of the housewife and household consumption expenditure. The average income contribution of housewives to the total household income is IDR 12,274,186 per year, accounting for approximately 35.7% of the total household income, which averages IDR 34,353,951 per year. Labor time allocation by housewives in Mataram City significantly affects household income, particularly in both agricultural and non-agricultural sectors. In agriculture, the regression coefficient of IDR 13,033.03 and a correlation coefficient of 0.539 indicate a strong and positive relationship. Similarly, in non-agricultural activities, the regression coefficient of IDR 3,201.09 and a correlation coefficient of 0.477 also demonstrate a significant and moderately positive correlation.

Keywords: Labor Time Allocation, Income Contribution, Household Income.

1. INTRODUCTION

The agricultural sector in Indonesia continues to play a vital role in the national economy, encompassing not only the cultivation of food and horticultural crops but also including the plantation, livestock, and fisheries sub-sectors. Within these various agricultural activities, women particularly wives or housewives actively participate, both as household managers and as part of the labor force. However, their roles in decision-making processes related to agricultural production are not yet fully visible or optimally acknowledged. Additionally, income contributions made by housewives are often perceived merely as supplementary. In fact, under economic constraints, housewives frequently take the initiative to seek additional income to support their families (Nadzirah, 2020).

Globally, both women and men serve as producers in agricultural production while also managing household responsibilities to ensure livelihoods, food security, and family nutritional needs. Efficient utilization of agricultural resources is a key

factor in enhancing productivity, where land, water, and labor are crucial components requiring optimal allocation. In situations where the husband's income is insufficient to meet household needs, women actively contribute to the family economy through engagement in productive economic activities (Rico, 2016).

From an economic perspective, the household is regarded as a unit of both production and consumption. Socially, the household is the smallest social unit that functions as a space for economic, social, and cultural interactions among family members (Siddik, 2023). A farm household (RTP) is a complex unit that functions as a farm enterprise, a labor household, and a consumer unit, characterized by the use of family labor and production outputs that may be consumed directly or marketed (Nakajima, 2012).

A report by UN Women (2023) shows that women constitute nearly 40% of the global agricultural workforce. However, they often face limited access to land, training, technology, and capital. These disparities directly impact the productivity and well-being of farming families. In Indonesia, women face significant structural barriers to fully optimizing their economic roles. For example, World Bank data indicates that only about 12.7% of women aged 15–49 were registered as landowners in 2017 (World Bank, 2020). Furthermore, data from the National Land Agency in 2019 shows that only 24.2% of total land in Indonesia is registered under women's names. This condition limits women's access to credit (with land often used as collateral), training, and agricultural technology. These issues reflect the structural challenges faced by women, including housewives in both rural and urban areas, in maximizing their economic potential (Wibowo, 2020). Therefore, it is essential to gain a deeper understanding of their work time allocation and economic contributions, particularly in the context of farm households.

A study conducted by Prospera, Investing in Women, and the University of Indonesia revealed that women bear a significantly higher burden of invisible labor compared to men. Time-use surveys in Indonesia record that women work an average of 11.6 hours per day, with domestic work being 2.8 times higher than that of men (9.2 hours). This unpaid domestic and informal care work reduces their opportunities to enter formal employment, extend productive work hours, or attend skills training (Investing in Women, 2023).

Efforts to meet household consumption needs are often achieved by increasing income through higher labor productivity or extending working hours in various economic activities. Theoretically, household members only tend to increase their work time if the wage offered is attractive enough. However, in urgent situations, poor households often accept any available wage regardless of the amount (Siddik, 2023).

Beyond economic factors, married women's decisions to work are also influenced by self-actualization, the desire to earn their own income, fill spare time, and meet household needs (Gupta, 2007; Putri, 2012). This phenomenon indicates that women, including housewives, are increasingly motivated to participate in economic activities.

The growing participation of women in the labor force also serves as an important indicator of changes in household social and economic structures. According to data from the Central Statistics Agency (BPS), West Nusa Tenggara is among the provinces showing a positive trend in women's labor force participation. The Female Labor Force Participation Rate (FLFPR) in the province increased significantly from 50.44% in 2018 to 62.54% in 2023 (BPS, 2024). This demonstrates that women, including housewives, are becoming more actively involved in the economy, both in agriculture and other informal sectors. This increase can be interpreted as an adaptation to economic pressures and a reflection of growing awareness of the importance of women's roles in economic development.

In Mataram City, data from the 2023 Agricultural Census of West Nusa Tenggara shows that of the 768,765 workers in the agricultural sector, 14.43% are women (BPS, 2024). This reinforces the fact that women, including housewives, are key actors in agricultural activities. The Mataram City Government has also implemented various women empowerment programs since 2021, including entrepreneurship training, microenterprise mentoring, and women's cooperative development, aimed at promoting women's involvement in local economic development (Bappeda NTB, 2023).

In practice, work time allocation is one of the factors affecting farm productivity. Determining optimal working hours is crucial to improving both the quality and quantity of production (Purnamasari, 2019). The involvement of housewives in income-generating activities indicates the growing role of women in allocating household economic resources. Economic needs are a dominant factor driving women to work in order to meet daily living expenses or increase household income. In Mataram City, housewives from farming families are engaged not only in agriculture but also in non-agricultural economic activities. They allocate long and varied working hours across sectors such as farming, livestock, trade, and services, while still carrying significant domestic responsibilities.

Based on these considerations, this study aims to analyze the work time allocation of farm housewives in economic activities in Mataram City, identify the factors influencing such allocation, assess the contribution of housewives to total farm household income, and analyze the relationship between housewives' work time allocation and household income in Mataram City.

2. METHODOLOGY

This study employed a descriptive method with a quantitative approach. The research location was determined using purposive sampling by selecting three districts in Mataram City: Sekarbela District, Mataram District, and Sandubaya District. The sample size was calculated using Slovin's formula, resulting in a total of 43 respondents—19 from Sekarbela, 13 from Sandubaya, and 8 from Mataram. The respondents in this study were housewives from farm households, selected using a systematic sampling technique.

Data were collected through surveys, structured interviews based on questionnaires, and documentation. The data obtained consisted of both quantitative and qualitative information. The analytical techniques used included quantitative descriptive analysis and regression analysis to examine the relationships among the variables studied.

1) Analysis of Labor Time Allocation Among Farm Housewives in Mataram City

According to BPS NTB (2014), the total allocation of working time can be systematically described by categorizing the sources of household income among farming families into various economic activities. This time allocation reflects the division of labor across both agricultural and non-agricultural sectors, serving as a basis for understanding the economic contribution of each activity within the household labor structure.

$$N_t = N_1 + N_2$$

Description:

N_1 : Labor time allocated to agricultural activities (hours/year)

N_2 : Labor time allocated to non-agricultural activities (hours/year)

N_t : Total Labor Time Allocation in Economic Activities (hours/year)

2) Analysis of Factors Influencing Labor Time Allocation of Female Farmers' Households in Mataram City

In analyzing the working time allocation of farm household women, this study proposes two alternative regression models, namely the multiple linear regression model and the natural logarithmic model, as presented below

1) Multiple Linear Regression Model

$$N_1 = \alpha_{01} + \alpha_{11}X_1 + \alpha_{21}X_2 + \alpha_{31}X_3 + \alpha_{41}X_4 + \alpha_{51}X_5 + \alpha_{61}X_6 + \alpha_{71}X_7 + \varepsilon_{01}$$

$$N_2 = \alpha_{02} + \alpha_{12}X_1 + \alpha_{22}X_2 + \alpha_{32}X_3 + \alpha_{42}X_4 + \alpha_{52}X_5 + \alpha_{62}X_6 + \alpha_{72}X_7 + \varepsilon_{02}$$

$$N_t = \alpha_{0t} + \alpha_{1t}X_1 + \alpha_{2t}X_2 + \alpha_{3t}X_3 + \alpha_{4t}X_4 + \alpha_{5t}X_5 + \alpha_{6t}X_6 + \alpha_{7t}X_7 + \varepsilon_{0t}$$

2) Natural Logarithmic Regression Model

$$\begin{aligned} \ln N_1 = & \beta_{01} + \beta_{11}\ln X_1 + \beta_{21}\ln X_2 + \beta_{31}\ln X_3 + \beta_{41}\ln X_4 + \beta_{51}\ln X_5 \\ & + \beta_{61}\ln X_6 + \beta_{71}\ln X_7 + \mu_{01} \end{aligned}$$

$$\begin{aligned} \ln N_2 = & \beta_{02} + \beta_{12}\ln X_1 + \beta_{22}\ln X_2 + \beta_{32}\ln X_3 + \beta_{42}\ln X_4 + \beta_{52}\ln X_5 \\ & + \beta_{62}\ln X_6 + \beta_{72}\ln X_7 + \mu_{02} \end{aligned}$$

$$\begin{aligned} \ln N_t = & \beta_{0t} + \beta_{1t}\ln X_1 + \beta_{2t}\ln X_2 + \beta_{3t}\ln X_3 + \beta_{4t}\ln X_4 + \beta_{5t}\ln X_5 \\ & + \beta_{6t}\ln X_6 + \beta_{7t}\ln X_7 + \mu_{0t} \end{aligned}$$

Description:

- N_1 : Labor time allocated to agricultural activities (hours/year)
- N_2 : Labor time allocated to non-agricultural activities (hours/year)
- N_t : Total Labor Time Allocation in Economic Activities (hours/year)
- X_1 : Respondents' Age (years)
- X_2 : Level of Formal Education (years)
- X_3 : Husband's Income (in IDR)
- X_4 : Total Number of Household Members (persons)
- X_5 : Household Consumption Value (IDR)
- X_6 : Age of Youngest Child in the Household (years)
- X_7 : Farm Size Owned (ares)

$\varepsilon_{0i}, \mu_{0i}$: Error Term for Each Model

3) Household Income and the Contribution of Housewives

a. Household Income of Farmers in Mataram City

The sources of household income for farming families are categorized into three types of economic activities: income from agricultural activities, non-agricultural activities, and non-labor income sources. These can be systematically stated as follows:

$$Y_t = Y_1 + Y_2 + Y_3$$

Description:

- Y_t : Total Household Income of Farmers in Mataram City (IDR)
- Y_1 : Total Household Income of Farmers from Agricultural Activities (IDR)
- Y_2 : Total Household Income of Farmers from Non-Agricultural Activities (IDR)
- Y_3 : Total Household Income of Farmers from Non-Labor Activities (IDR)

b. Contribution of Housewives

To analyze the magnitude of housewives' income contribution to the total household income of farmers in Mataram City, the following formula is used

$$K_{yi} = \frac{Y_i}{Y_t} \times 100$$

Description:

- K_{yi} : Housewife's Income Contribution (%)
- Y_i : Total Income of the Housewife (IDR)
- Y_t : Total Household Income (IDR)

4) The Relationship Between Labor Time Allocation and the Income of Farmer Housewives in Mataram City

To examine the relationship and role of labor time allocation on income from each activity as well as total household income, a simple linear regression analysis can be conducted."

$$Y_1 = d_{01} + d_{11}N_1 + \theta_{01}$$

$$Y_2 = d_{02} + d_{12}N_2 + \theta_{02}$$

$$Y_t = d_{0t} + d_{1t}N_t + \theta_{0t}$$

Description

- Y_1 : Income of housewives from agricultural activities (IDR)
- Y_2 : Income of housewives from non-agricultural activities (IDR)
- Y_t : Total income of farming households in Mataram City (IDR)
- N_1 : Labor time allocated by housewives to agricultural activities (hours/year)
- N_2 : Labor time allocated by housewives to non-agricultural activities (hours/year)
- N_t : Total labor time allocated by housewives to both agricultural and non-agricultural activities (hours/year)
- θ_{0i} : Error Term for Each Model

3. RESULTS AND DISCUSSION

1. Characteristics of Farmer Households in Mataram City, 2024

This study was conducted in three sub-districts representing the Mataram City area: Sekarbela, Mataram, and Sandubaya. The household characteristics examined include land ownership status, age of respondents, highest level of formal education completed, farming experience, number of household members, and age of the youngest child in the family. The details of these characteristics are organized and presented in the following table:

Table 1: Characteristics of Farming Households in Mataram City 2024

No	Description	Total (persons)	Percentage (%)
1	Land Tenure Status	43	100,00
	Owned	6	13,95
	Rented	18	41,86
	Sharecropping	19	44,18
2	Respondents' Age (Years)	43	100,00
	30-40	17	39,53
	41-50	13	30,23
	51-60	10	23,25
	61-64	3	6,97
3	Level of Formal Education (Years)	43	100,00
	1-3	18	41,86
	4-6	10	23,25
	7-9	9	20,93
	10-12	6	13,95
4	Farming Experience (Years))	43	100,00
	1-10	17	39,53
	11-20	13	30,23
	21-30	10	23,25
	31-40	2	4,65
	41-50	1	2,32
5	Number of Household Members	43	100,00
	1-3	14	32,55
	4-6	25	58,13
	7-9	4	9,30
6	Age of Youngest Child in the Household	43	100,00
	1-10	18	41,86
	11-20	15	34,88
	21-30	9	20,93
	31-40	1	2,33

Source: Processed Primary Data (2025)

Table 1 describes the socio-economic characteristics of 43 farming households that served as respondents in Mataram City. The majority of respondents were sharecroppers (44.18%) and land tenants (41.86%), while only 13.95% cultivated their own land. The dominance of sharecropping status reflects that sharecropping arrangements remain a common form of agrarian relationship in the study area. In this system, farmers are required to share a portion of their agricultural output with

landowners according to mutually agreed terms, which results in relatively lower net income. Conversely, for households that cultivate their own land or rented land, the entire agricultural yield can be retained, as there is no obligation to share the harvest with others. These differences in land tenure status directly affect the income level and economic independence of farming households.

In terms of age, most respondents are in the productive age group. A total of 17 respondents (39.53%) were aged between 30–40 years, and 13 respondents (30.23%) were in the 41–50 years range. Ten respondents (23.25%) were in the 51–60 age group, and only three respondents (6.97%) were over 60 years old. This indicates that the majority of farmers are still in the working-age population, which potentially supports the continuity of agricultural activities in the area.

The education level of respondents indicates a relatively low formal education attainment. Approximately 41.86% of respondents had completed only 1–3 years of formal education, and 23.25% had completed 4–6 years. Respondents with 7–9 years of education accounted for 20.93%, while those with 10–12 years made up only 13.95%.

In terms of farming experience, 17 respondents (39.53%) had 1–10 years of experience, while 13 respondents (30.23%) had 11–20 years. Ten respondents (23.25%) had been involved in farming for 21–30 years, while the rest had more than 30 years of experience. This indicates that most respondents have relatively sufficient farming experience, which can serve as a foundation for improving productivity and farming efficiency.

Most farming households in Mataram City had between 4 to 6 members, accounting for 58.13%. Meanwhile, 32.55% of households consisted of 1 to 3 members, and the remaining 9.30% had 7 to 9 members. This composition shows that farming households generally have a medium-sized structure, potentially providing family labor for farming activities and reflecting a strong agrarian household pattern.

The distribution of the age of the youngest child in farming households shows that most are over 10 years old. The proportion of youngest children aged 11–20 years is 34.88%, those aged 21–30 years comprise 20.93%, and 2.33% are aged 31–40 years. When combined, youngest children aged above 10 years account for 58.14%. This indicates that the majority of youngest children in farming households have entered adolescence to young adulthood, typically possessing a higher degree of independence and potential to become productive labor.

2. Labor Allocation of Housewives in Farming Household Economic Activities

The role of housewives in the economy has become increasingly diverse, encompassing both agricultural and non-agricultural sectors as a strategy to improve household income and reduce reliance on a single income source. In Mataram City, the types of labor performed by housewives in farming households are divided into two main sectors, reflecting economic diversification efforts as an adaptive response to economic challenges. The data on the average annual labor allocation of housewives in farming households in Mataram City for the year 2024 are presented in the table below

Table 2: Average Annual Labor Allocation of Farm Household Housewives in Economic Activities in Mataram City, 2024

No	Description	Working Hours (Hours/Year)	Percentage (%)
1	Agricultural Activities	1122	55,56
	a. Rice Farming	623	30,87
	b. Water Spinach Cultivation	131	6,47
	c. Livestock Farming	150	7,41
	d. Group/Individual Labor	198	9,81
	e. Flower Picking	20	1,00
2	Non-Agricultural Activities	897	44,41
	a. Retail	279	13,82
	b. Home-Based Small Enterprises	63	3,01
	c. Agricultural Product Marketing	242	12,00
	d. Seasonal Fruit Selling	29	1,45
	e. Domestic Helper (Housekeeping)	145	7,19
	f. Shop Attendant	51	2,52
	g. Childcare Provider	88	4,34
	Total	2019	100,00

Source: Processed Primary Data (2025)

Table 2 presents the average annual labor allocation of farm housewives in Mataram City in 2024, amounting to 2,019 hours per year for economic activities. Of this total, 1,122 hours (55.56%) were allocated to agricultural activities, while 897 hours (44.41%) were dedicated to non-agricultural activities.

Overall, these findings highlight the strategic role of farm housewives in supporting household economic resilience through various productive labor engagements. The study found that, on average, farm housewives in Mataram City work 39.3 hours per week or approximately 5.6 hours per day, reflecting a high level of involvement in productive labor despite domestic responsibilities. This figure is comparable to the average working hours of urban women in formal sectors (39.57 hours per week). According to the classification of Statistics Indonesia (BPS), farm housewives in Mataram qualify as full-time labor force participants, although the majority of their work is within the informal sector.

In contrast, Munira's study (2023) found that women working as warehouse laborers in pinang (betel nut) processing recorded an average of 108.6 hours per month, or approximately 1,303 hours per year—equivalent to only 15.1% of their total available time. The remaining 84.9% was spent on other activities such as domestic chores, rest, and non-economic tasks. This suggests that most of their time was not allocated to formal economic labor.

When compared to Munira's findings, there is a significant difference in women's labor allocation for economic activities. This study reveals that the involvement of farm housewives in economic labor is substantially higher. Such disparity is likely attributed to differences in geographical and socio-economic contexts. Women in Mataram City have broader access to various types of employment, including informal sectors such as trade and services, enabling them to allocate more working hours to economic activities. On the other hand, women in rural areas like Sawang, North Aceh, are more limited to seasonal or wage-based labor, such as working in pinang warehouses, where working hours are neither as extensive nor as diverse as those available to urban housewives.

3. Factors Influencing the Labor Time Allocation of Housewives

Based on two statistical approaches—multiple linear regression and the natural logarithmic transformation model—the analysis of factors influencing the labor time allocation of housewives in Mataram City was ultimately conducted using the log-linear model. This model was selected as it provided more robust results compared to the standard linear regression, as indicated by a higher coefficient of determination (R^2), better significance levels in the F-test (overall significance), and a greater number of statistically significant independent variables based on the t-test (partial significance).

In the model for agricultural activities, the variable of household consumption expenditure (X_5) was excluded due to a failure to meet the assumption of homoscedasticity. Theoretically, consumption is more appropriately viewed as an outcome of labor time allocation decisions rather than as a determining factor. The exclusion of this variable also improved the overall model fit and reduced potential multicollinearity, which could obscure the influence of other variables.

In the non-agricultural labor model, the husband's income (X_3) and household consumption (X_5) were also removed, as their inclusion rendered the overall model statistically insignificant. Economically, a higher husband's income does not necessarily reduce a wife's labor participation, as work decisions may also be driven by non-economic factors such as self-fulfillment or social needs. Additionally, household consumption is better understood as an outcome variable, not a causal determinant of labor decisions. Thus, excluding these variables enhanced model accuracy and avoided misleading interpretations.

In the model assessing overall labor time allocation in economic activities, the variables of education level (X_2) and agricultural land size (X_7) were excluded, as they showed no statistically significant partial effects. The education variable was removed due to limited variation among respondents, providing minimal explanatory power regarding differences in labor preferences or opportunities. Meanwhile, land size does not always correlate directly with increased labor hours from wives, as larger plots are often managed using external labor, technology, or assistance from other family members. Therefore, the exclusion of these variables allowed for a more parsimonious and contextually relevant model.

The following are the regression results for the factors influencing the labor time allocation of housewives in farming households in Mataram City.

Table 3: Regression Results of Factors Influencing the Labor Time Allocation of Farm Household Housewives in Mataram City 2024

No	Variable	Agricultural	Non-Agricultural	Economic Activities
		N_1	N_2	N_t
1	X_1	0,503 (-0,936)	0,043 (3,650)	0,006 (1,334)
2	X_2	0,284 (-0,302)	0,450 (0,266)	- -
3	X_3	0,235 (-0,383)	- -	0,105 (-0,223)
4	X_4	0,021 (1,328)	0,098 (-1,168)	0,302 (-0,288)
5	X_5	- -	- -	0,055 (0,702)
6	X_6	0,026 (0,671)	0,037 (-0,787)	0,418 (-0,114)
7	X_7	0,031 (0,672)	0,082 (-0,540)	- -
	Constant	10,872	-2,686	-4,884
	Coefficient of Determination (R^2)	0,293	0,245	0,279
	F-statistic	2,490	2,395	2,864
	Significance (simultaneous test)	0,041	0,056	0,028
	Alpha (α)	0,1	0,1	0,1

Source: Processed Primary Data (2025)

a. Coefficient of Determination

Nilai The R^2 value illustrates the extent to which all independent variables contribute to explaining the variation in the dependent variable. The analysis presented in Table 3 indicates that the factors included in the model have a moderate influence on the labor time allocation of housewives, although not yet dominant. In agricultural activities (N_1), the independent variables explain 29.3% of the variation in the labor time allocation of housewives. In non-agricultural activities (N_2), the explanatory power of the model reaches 24.5%. Overall, the total labor time allocated by housewives to economic activities (N_t) can be explained by the model at a rate of 27.9%. These findings suggest that although labor time allocation plays a role in determining household income, there are still other factors beyond housewives' labor time that significantly influence household income.

b. Simultaneous Test (F)

Table 3 shows that, simultaneously, the factors included in the model have a statistically significant effect on the labor time allocation of farm housewives. In agricultural activities, the significance value of 0.041 is below the predetermined significance level ($\alpha = 0.1$), indicating that the independent variables jointly have a significant effect on labor time allocation in agricultural work. A similar result is observed in non-agricultural activities, with a significance value of 0.056, which is also less than $\alpha = 0.1$. This indicates that the factors used in the model collectively exert a significant influence on labor allocation outside the agricultural sector. Meanwhile, in overall economic activities, the model yields a significance value of 0.028, which is well below the 0.1 threshold. Therefore, it can be concluded that the constructed regression model is statistically significant in explaining variations in the labor time allocation of housewives across economic activities. These findings strengthen the evidence that the independent variables used in the model, when considered simultaneously, play an important role in influencing the labor time allocation of housewives in all three types of economic activities analyzed.

c. Partial Test (t)

The following is the interpretation of the partial test results (t-test) regarding the influence of each factor on the labor allocation of housewives:

1) Usia (X_1)

The age of respondents has a significant and positive effect on the labor allocation of housewives in non-agricultural activities. Assuming other factors remain constant, a 1% increase in age leads to a 3.65% increase in labor allocation in non-agricultural work annually. Age also has a significant and positive effect on overall economic activities, where a 1%

increase in age results in a 1.334% increase in labor allocation, assuming *ceteris paribus*. These findings indicate that older respondents tend to have a greater commitment to work—both agricultural and non-agricultural—due to increased household responsibilities such as supporting the family or funding children's education. However, in agricultural activities, the effect is not statistically significant, as shown by the p-value (0.503) which exceeds the significance level $\alpha = 0.1$.

2) Level of Formal Education (X_2)

The Education level does not have a significant effect on the labor allocation of housewives in agricultural, non-agricultural, or overall economic activities, as the significance values are all greater than $\alpha = 0.1$.

3) Husband's Income (X_3)

Husband's income also does not significantly affect the labor allocation of housewives across all economic activities, including agricultural and non-agricultural sectors, based on significance values greater than $\alpha = 0.1$.

4) Total Number of Household Members (X_4)

This variable shows differing effects based on the economic activity involved. In agricultural activities, the number of household members has a positive and significant influence on labor allocation. A 1% increase in household members leads to a 1.328% increase in labor allocation by housewives in agriculture. This reflects the collective and flexible nature of agricultural work, where women often participate in production. Conversely, in non-agricultural activities, this variable has a significant negative effect: a 1% increase in household members leads to a 1.168% reduction in labor allocation. This is likely due to increasing domestic burdens (childcare, house chores, caregiving), limiting the ability of housewives to participate in off-farm labor. For overall economic activities, the effect is not significant, as indicated by a p-value above $\alpha = 0.1$.

5) Household Consumption Value (X_5)

This factor shows a positive and significant effect on overall labor allocation by housewives, with a significance value of 0.055 ($< \alpha = 0.1$). A 1% increase in household consumption leads to a 0.702% increase in labor allocation in overall economic activities. Increased consumption indicates growing economic needs or higher living standards, pushing housewives to increase their labor participation both in agricultural and non-agricultural sectors. However, when analyzed separately, consumption does not significantly influence labor allocation in agricultural or non-agricultural activities individually, indicating its effect is more relevant at the aggregate level. *ekonomi*.

6) Age of Youngest Child in the Household (X_6)

This factor has significant but opposing effects. In agriculture, it has a positive effect: a 1% increase in the age of the youngest child increases labor allocation by 0.671% annually. In non-agriculture, it has a negative effect: the same increase leads to a 0.787% reduction in labor allocation. This contrast reflects structural differences between the sectors. Agriculture allows for more flexible labor participation, especially as the child ages. On the contrary, non-agricultural work often requires leaving the house and adhering to fixed schedules, making it less accessible for women with continuing domestic duties. The effect is not significant for overall labor allocation in economic activities, indicating a contextual influence based on sector type.

7) Farm Size Owned (X_7)

The Farm size owned has a significant and positive effect on the labor allocation of housewives in agricultural activities, and a significant negative effect in non-agricultural activities. A 1% increase in land ownership leads to a 0.672% increase in labor allocation in agriculture. Conversely, the same 1% increase in land size results in a 0.54% decrease in labor allocation in non-agricultural work.

From an economic perspective, owning larger farmland offers greater income potential from the agricultural sector. As the capacity for agricultural production increases, households become less dependent on supplementary income from non-agricultural sources. This finding is consistent with the labor substitution principle across sectors, whereby households reallocate labor toward sectors perceived as more productive and economically rewarding. Larger farmland holdings encourage households—particularly housewives—to concentrate their labor efforts in agriculture, as it becomes the more profitable option. As a result, labor allocation in non-agricultural sectors declines, as these activities are no longer prioritized in the household livelihood strategy. This explains the negative and significant direction of the relationship with labor allocation in non-agricultural work.

Based on the results of this study, the factors influencing the labor allocation of housewives in Mataram City in 2024 exhibit relatively limited effects. This condition may be attributed to other influential factors that have not been identified or included in the current model. This finding is consistent with Reynold (1978), who states that time allocation among household members is determined by various factors, including: (a) lifestyle patterns, (b) ownership of productive assets, (c) socio-economic conditions (e.g., wage levels), and (d) individual characteristics. Lifestyle is a broad concept shaped by inherent conditions such as ethnicity, religion, and social relationships within the residential environment. Meanwhile, individual characteristics can be examined through variables such as age, education level, and acquired skills.

In terms of the factors influencing labor allocation, a study by Manyang (2022) found that, simultaneously, age, education level, number of dependents, land size, farming experience, and employment status of female farmers had significant effects on the labor hours allocated to arabica coffee farming activities. However, only three variables were partially significant: age, land size, and farming experience.

In comparison, the present study found that labor allocation of housewives in agricultural activities is significantly influenced by the number of household members, age of the youngest child, and farm size, with a coefficient of determination (R^2) of 29.3%. In non-agricultural activities, factors such as respondent's age, number of household members, age of the youngest child, and land size also show significant influence, albeit with a lower contribution ($R^2 = 24.5%$). Meanwhile, in the context of overall economic activities, the significant variables were the age of the housewife and household consumption value, with an R^2 of 27.9%.

This comparison highlights that farm size is a consistently significant variable in both studies, emphasizing the crucial role of access to productive resources. However, differences are evident: farming experience, which was significant in Manyang's study, was not included in the present model, while age of the youngest child and household consumption value emerged as significant in this urban setting, such as Mataram City.

4. Income and Contribution of Farm Housewives in Mataram City

a) Farm Household Income in Mataram City, 2024

To provide an overview of the income contribution from each household member based on employment sector, the following data presents the average household income of farm families in Mataram City in 2024. The income is categorized by agricultural and non-agricultural sectors, as shown in Table 4 below.

Table 4: Distribution of Average Household Income by Source and Household Member – Mataram City 2024

Description	Average Income (IDR/year)		Total
	Agricultural	Non-Agricultural	
Housewife	7.927.907	4.346.279	12.274.186
Head of Household	19.127.907	1.100.930	20.228.837
Other Household Members	1.159.535	510.000	1.669.535
Non-Labor Income	0	0	181.395
Total	28.215.350	5.957.209	34.353.954

Sumber: Data Primer diolah (2025)

The analysis results show that the main source of income for farm households in Mataram City comes from the agricultural sector, with an average of IDR 28,215,349/year. Income from the non-agricultural sector was recorded at IDR 5,957,209 per year, while income from non-labor sources, such as social assistance and family remittances, amounted to only IDR 181,395 per year. Thus, the total average household income reached IDR 34,353,954 per year.

The income earned by housewives amounted to IDR 12,274,186 per year, most of which was derived from agricultural activities, with the remainder from non-agricultural economic activities, such as petty trade, domestic services, and childcare. Meanwhile, the head of the household earned IDR 20,228,837 per year, consisting of income from the agricultural sector and additional earnings from non-agricultural economic activities.

Other family members, including children, also contributed to household income, adding IDR 1,633,953 per year through both agricultural and non-agricultural activities, such as informal work in the trade and service sectors.

Overall, these findings indicate that agriculture remains the backbone of the household economy for farmers in Mataram City. Nevertheless, income from non-agricultural sectors and non-labor sources still plays an important complementary role in maintaining household economic stability and resilience.

b) Contribution of Farm Housewives in Mataram City

The analysis of farm household income contribution in Mataram City in 2024 was carried out by identifying the proportion of income generated by each family member, including the housewife, the head of the household, other household members, as well as income from non-labor sources.

Table 5: Income Contribution of Farm Housewives in Mataram City in 2024

No	Description	Average Income (IDR/year)	Contribution (%)
1	Income from Housewife	12.274.186	35,73
2	Income from Head of Household	20.228.838	58,88
3	Income from Other Household Members	1.669.535	4,86
4	Non-Labor Income	181.395	0,53
	Total	34.353.954	100,00

Source: Processed Primary Data (2025)

Based on the data in Table 5, housewives in farm households in Mataram City contributed an annual income of IDR 12,274,186, equivalent to 35.73% of the total household income. This figure reflects that more than one-third of the family’s income comes from the active role of housewives in economic activities, both within and outside the agricultural sector

Based on the findings of this study, farm housewives contributed an annual income of IDR 12,274,186, or approximately 35.73% of the total household income of IDR 34,353,954. This figure indicates that more than one-third of the family’s income originates from the active role of housewives, both through farming activities and work outside the agricultural sector. This contribution is relatively higher compared to the findings of Soekartini (2023) in Maria Village, Wawo Subdistrict, Bima Regency, where women’s income contribution accounted for only 24.87% of the total farm household income of IDR 58,055,842 per year. This difference suggests that the economic role of women in farm households in Mataram City tends to be greater, both in terms of the intensity of their involvement in productive activities and the proportion of their contribution to total household income. It also reflects the possibility of differences in social context, access to resources, and available employment opportunities across the respective regions.

5. The Relationship Between the Labor Time Allocation of Farm Housewives and Farm Household Income

To examine the effect of labor time allocation by farm housewives on farm household income, a regression analysis was conducted based on the types of labor time, namely agricultural labor time, non-agricultural labor time, and economic activity labor time. The results of the analysis are presented in Table 6.

Table 6: Regression Analysis Results of the Relationship Between Housewives’ Labor Time and Farm Household Income

Description	Hasil Analisis		
	Agriculture (N_1)	Non-Agriculture (N_2)	Economic Activities (N_t)
t-value	4,093	3,475	0,483
Significance (Sig.)	0,000	0,000	0,632
Alpha (α)	0,1	0,1	0,1
Regression Coefficient	13033,03	3201,09	1818,25
Correlation Coefficient	0,539	0,477	0,075
Coefficient of Determination (R^2)	0,290	0,227	0,006

Source: Processed Primary Data (2025)

Based on the regression analysis presented in Table 6, the allocation of labor time by farm housewives in agricultural activities (N_1) shows a significant effect on household income from the agricultural sector (Y_1), with a regression coefficient of 13,033.03. This means that each one-unit increase in labor time allocated to agricultural work is associated with a potential increase in farm household income from that sector by IDR 13,033.03. The correlation coefficient of 0.539 indicates a strong positive relationship, suggesting that the more time housewives allocate to agricultural activities, the higher the tendency for household income from this sector to increase.

Meanwhile, labor time allocation in non-agricultural activities (N_2) also has a significant effect on household income from non-agricultural sources. The regression coefficient of 3,201.09 indicates that an additional unit of labor time in this sector could increase non-agricultural household income by IDR 3,201.09. With a correlation coefficient of 0.477, the relationship between the two variables is considered moderately strong and positive, implying that housewives' involvement in non-agricultural economic activities tends to provide a meaningful contribution to household income.

In contrast, the total labor time allocation (N_t), which includes both agricultural and non-agricultural sectors, does not show a statistically significant effect on overall household income. The regression coefficient of 1,818.25 and a very weak correlation coefficient of 0.075 suggest a negligible relationship between total labor time and total income.

The aggregation of labor time and income across both agricultural and non-agricultural sectors may obscure the unique characteristics of each sector. In disaggregated models, labor time in each sector is more strongly correlated with sector-specific income due to differing patterns of activity, productivity, and earnings. However, when these variables are aggregated, such distinctions are blurred, potentially diminishing the model's sensitivity to variations in labor time effects on income. This may lead to statistically insignificant results and misrepresentations of the actual relationships—a phenomenon known as the **ecological fallacy**.

This observation is supported by Garrett (2002), who explains that regression coefficients and their statistical significance may vary across different levels of data aggregation. Since aggregated data are often used to infer individual behavior, such aggregation can produce misleading conclusions about individual economic behavior. In other words, using aggregated data may distort regression results—such as coefficient values and significance—compared to results derived from disaggregated data. As a result, conclusions drawn from aggregate data may not accurately reflect individual-level relationships, as important variations may be hidden.

The findings of this study show that the labor time allocation of housewives, both in agricultural and non-agricultural sectors, has a significant and positive effect on farm household income. These results align with the study by Munira (2023), which analyzed labor time allocation and income contribution of women working as areca nut warehouse laborers in Sawang Subdistrict, North Aceh Regency. Munira's study found that women devoted an average of 108.6 working hours per month (15.1% of total time), and although their income contribution was relatively low at 19.2%, their labor time allocation still significantly affected household income, as indicated by a significance value of $0.000 < \alpha = 0.05$ and a correlation coefficient of 0.596, reflecting a strong positive relationship.

In comparison, the correlation coefficient for agricultural labor in this study was 0.539, which, although slightly lower than Munira's, still reflects a moderate and positive relationship. This indicates that labor time allocation remains an important factor in improving household income, although the strength of the relationship may vary depending on the type of work and the socio-economic conditions of each region.

4. CONCLUSION

1. The labor time allocation of farm housewives in Mataram City in 2024 reached an average of 2,019 hours per year or approximately 39.3 hours per week. Of that amount, 1,122 hours (55.56%) were allocated to agricultural activities and 897 hours (44.41%) to non-agricultural activities. This indicates that housewives are part of the full-time labor force.
2. FaktorThe factors that significantly influence the labor time allocation of housewives in agricultural activities are the number of household members, the age of children, and land size. Meanwhile, in non-agricultural activities, the respondent's age, number of household members, age of the youngest child, and land size have a significant effect. Overall, the respondent's age and household consumption value also significantly affect labor time allocation.
3. Kontribusi The average income contribution of farm housewives in Mataram City is IDR 12,274,186 per year, or 35.73% of the average total household income of IDR 34,353,951 per year.
4. The labor time allocation of farm housewives in Mataram City has a significant effect on household income, particularly in the agricultural and non-agricultural sectors. In agricultural activities, the regression coefficient of IDR 13,033.03 and the correlation coefficient of 0.539 indicate a positive relationship with a strong correlation. Meanwhile, in non-agricultural activities, the effect is also significant, with a regression coefficient of IDR 3,201.09 and a correlation coefficient of 0.477, which also reflects a positive relationship and a moderate correlation.

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